

## **II. REMARKS**

Before the amendments made herein, claims 1, 5-13, 16-19 and 21-36 were pending. Claim 33 has been canceled herein without prejudice. Accordingly, after the amendments made herein are entered, claims 1, 5-13, 16-19, 21-32 and 34-36 will be pending.

### **A. Regarding the amendments.**

Claim 1 has been amended by deleting the requirement that the recited oligosaccharide consists of up to 10 saccharide units. The amendment is supported in the specification, for example, at page 9, lines 15-18, and by claim 1 as originally filed.

Claim 1 has also been amended by incorporating the limitation of claim 33. In turn, claim 33 is canceled herein without prejudice.

Because the amendments made herein are fully supported by the specification, no issue of new matter arises.

### **B. Regarding the indefiniteness rejection**

Claims 1, 7, 11, 12, 16 to 19, 27, 28 and 30 to 36 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. More specifically, the Action alleges that the term "saccharide units" is indefinite because the specification does not clearly define the term. Applicants respectfully traverse the rejection.

The term "saccharide units" has been deleted herein from the subject claims. Thus, claim 1 as amended herein is directed to an agent comprising an oligosaccharide, the oligosaccharide comprising the disaccharide of formula (I). An oligosaccharide is well known in the art as consisting of several monosaccharides or simple sugars. Thus,

the metes and bounds of claim 1, as well as the all claims dependent thereon, would be clear to the skilled artisan.

While the claims have been amended as discussed above, Applicants respectfully take issue with an allegation of the Action. More specifically, the Action alleges that the claims are unclear because, leaving aside the issue of whether the term “saccharide units” means “monosaccharide units” or “disaccharide units,” Applicants attempt “to claim the employment of [an] oligosaccharide compound with only a part of the compound recited in the claim. It is not clear what other saccharide moieties can be attached to the compound.”

Referencing the claims as now amended, they encompass the disaccharide of formula (I), which, as either all or part of the recited oligosaccharide, may also be attached to one or more monosaccharide units. As discussed above, the skilled artisan would understand precisely what is and what is not encompassed by the claims as currently amended. Accordingly, Applicants respectfully request that this rejection be withdrawn.

### **C. Regarding the obviousness rejection**

Claims 1, 7, 8, 10 to 12, 16 to 19, 21, 24, 25, 27, 28 and 30 to 36 are again rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Pat. No. 4,882,318 in view of Vlodavsky et al., Adv. Exp. Med. Biol., 13:317-27 (1992). Applicants respectfully traverse the rejection.

The Action argues that it is clear to the skilled artisan that the recited term “saccharide units” encompass up to 20 monosaccharide units and therefore the “instant claims” (i.e., rejected claims 7, 8, 10 to 12, 16 to 19, 21, 24, 25, 27, 28 and 30 to 36) encompass up to 20 monosaccharide units.

As an initial matter, Applicants respectfully point out that the Actions sweeping implication that all of the cited claims encompass 20 monosaccharide units is not accurate. Specifically, claim 7 (which is currently under this rejection) requires that the claimed oligosaccharide be a disaccharide. Accordingly, claim 7 should not be rejected under the reasoning of the current rejection. Similarly, claims 8, 10, 21, 24, and 25 also each require that the claimed oligosaccharide be a disaccharide. Accordingly, claims 8, 10, 21, 24 and 25 also should not be rejected under the reasoning of the current rejection.

Furthermore, claim 33 (now canceled) required that the oligosaccharide have a molecular weight of less than about 3000 daltons. As discussed previously and below, this limitation of claim 33 precludes an oligosaccharide anywhere close to one of 20 monosaccharide units. Moreover, claim 34 requires that the oligosaccharide have a molecular weight lying in the range of from about 400 daltons to about 2000 daltons. Further, claim 35 requires that the oligosaccharide have a molecular weight lying in the range of from about 400 to about 1100 daltons. Thus, claims 33 to 35 also should not be rejected under the reasoning of the current rejection.

More importantly, claim 1 has been amended to incorporate the limitations of claim 33. Thus, the limitations of claim 1 (and all claims dependent thereon) also preclude an oligosaccharide. Most importantly, as discussed previously and below, Vlodavsky teaches away from oligosaccharides with a molecular weight of less than about 4000 daltons. Thus, the cited references cannot teach or suggest the subject claims, as now amended.

More specifically, as discussed in the response to the Office Action mailed October 19, 2005, Applicants respectfully submit that Vlodavsky teaches absolutely nothing that would motivate the skilled artisan to use oligosaccharides with a molecular weight of less than about 3000 daltons to treat a malignancy, as required by the subject claims. Indeed, what Vlodavsky teaches about oligosaccharides that are within the scope of the claims would, if anything, motivate the skilled artisan not to employ such sugars to treat a malignancy.

What Vlodavsky teaches about such sugars for treating malignancy is the following: First, Vlodavsky teaches on page 319 that to retain high inhibitory activity against metastasis, the N-substituted oligosaccharides require a molecular size of about **4000 daltons or more**. Thus, Vlodavsky is teaching that the oligosaccharides within the scope of the subject claims, which require a molecular weight of less than about 3000 daltons, do not retain high inhibitory activity against cancer metastasis.

Moreover, Vlodavsky teaches on page 319 that a pentasaccharide was devoid of inhibitory activity. Thus, given these teachings of Vlodavsky, the skilled artisan would have absolutely no motivation to make the oligosaccharides of the subject invention as now claimed.

Secondly, the Action asserts on page 5 that, based on Figure 1 of Vlodavsky, the skilled artisan would have been motivated to “optimize” the length of the sugar units in order to maximize the tumor metastasis effect while minimizing the release of bFGF. Applicants respectfully disagree with this assertion.

On page 321, Vlodavsky teaches that maximal release of bFGF was accomplished with an eight unit oligosaccharide. Moreover, Vlodavsky teaches that, on a weight basis, the higher (e.g., 16) unit oligosaccharides showed similar results as the eight unit oligosaccharide. In view of these teachings, the skilled artisan would not have been motivated to “optimize” the length of the sugar (for example, to be in the eight-unit range) in order to maximize the tumor metastasis effect while minimizing the release of bFGF because a sugar in the eight-unit range would have a very high bFGF effect (as discussed above).

Furthermore, reading Vlodavsky, the skilled artisan would not have been motivated to use a much shorter sugar, such as one within the scope of the claims as now amended, to treat a malignancy. While Figure 1 of Vlodavsky shows that such sugars

release less bFGF, as discussed above, Vlodavsky also teaches that a sugar with five units had no inhibitory effect whatsoever against tumor metastasis.

In summary, Vlodavsky explicitly teaches against the sugars of the currently claimed invention by teaching that to retain high inhibitory activity against metastasis N-substituted oligosaccharides require a molecular size of about **4000 daltons or more**. Furthermore, Vlodavsky provides no motivation whatsoever to use the oligosaccharides as claimed herein to treat a malignancy. To the contrary – Vlodavsky leads the skilled artisan to use sugars of 16 units or longer to treat metastasis. Such sugars clearly have a molecular weight higher than 3000 daltons and are therefore outside the scope of the subject claims as amended herein. Moreover, Vlodavsky has only negative things to say about the metastatic inhibitory effect of sugars within the scope of the claimed invention (i.e., sugars with a molecular weight of 3000 daltons or less), such as the pentasaccharide was completely devoid of activity against tumor metastasis. For all of these reasons, Applicants respectfully request that this rejection be withdrawn.

### III. CONCLUSION

All of the issues raised in the Office Action have been addressed and are believed to have been overcome. Accordingly, it is respectfully submitted that all the claims under examination in the subject application are allowable. Therefore Applicants respectfully request a Notice of Allowance to this effect.

Respectfully submitted,

A handwritten signature in cursive script, reading "Martin D. Moynihan".

Martin Moynihan,  
Registration No. 40,338

Date: December 28, 2006